

**REMARKS**

Claims 1-17 are pending in this application. By this Amendment, claims 1 and 7 are amended and claims 14-17 are newly added. This amendment is supported by the specification at least from paragraphs [0024], [0032], [0033], and [0035]. No new matter is added.

**I. Objection to the Specification**

The Office Action objects to the specification for allegedly omitting the continuing data on the first page of the specification.

By this Amendment, the continuing data consistent with the Application Data Sheet and the Declaration that were submitted with the application is added to the first page. Accordingly, Applicants respectfully request withdrawal of the objection.

**II. Objections to Claims**

The Office Action objects to claims 1 and 7 for allegedly including informalities.

Claim 1 is amended to recite "a plasma producing means capable of producing plasma inside the case body for treating the substances to be treated contained in the exhaust gas," for further clarity. Claim 7 is amended to replace "method treating substances" with "method for treating substances."

Accordingly, Applicants respectfully request withdrawal of the objection to claims 1 and 7.

**III. Rejection of Claims Under 35 U.S.C. §103**

The Office Action rejects claims 1-4 under 35 U.S.C. §103(a) over Dosaka (U.S. Application Publication No. 2002/0034590); claims 5 and 6 under 35 U.S.C. §103(a) over Dosaka in view of Hemingway (U.S. Patent No. 6,464,945); claims 7-12 under 35 U.S.C. §103(a) over Dosaka in view of Tamura (U.S. Patent No. 6,558,637); and claim 13 under 35

U.S.C. §103(a) over Dosaka and Tamura in view of Hemingway. Applicants respectfully traverse this rejection.

In particular, claim 1 is amended to recite the pulse power source that is capable of automatically switching frequency and/or voltage for different values at predetermined time intervals. Dosaka does not disclose or render obvious at least these features.

The Office Action, on page 3, admits that Dosaka does not disclose the "switching" feature, but alleges that claim 1 only recites this feature as intended use. Thus, the Office Action asserts that Dosaka renders obvious the "switching" feature recited in claim 1.

However, Dosaka only discloses testing a plasma reactor under different voltages and frequencies (see Table 1 and paragraphs [0051] and [0058] of Dosaka). Dosaka does not disclose that the device performs automatically switching by itself without requiring a user to perform the switching. Further, Dosaka does not disclose that the device performs switching at predetermined time intervals. Thus, Dosaka does not disclose or render obvious at least the pulse power source that is capable of automatically switching frequency and/or voltage for different values at predetermined time intervals.

Accordingly, claim 1 is allowable. Claims 2-6 depend from claim 1, and are therefore also allowable by virtue of their dependence, as well as for the features that they recite. Accordingly, Applicants respectfully request withdrawal of rejection of claims 1 and 2-4 under 35 U.S.C. §103(a) over Dosaka and claims 5 and 6 under 35 U.S.C. §103(a) over Dosaka in view of Hemingway.

Moreover, Dosaka and Tamura, either alone or combined, do not disclose or render obvious at least switching frequency and/or voltage for different values at predetermined time intervals, as recited in claim 7.

Specifically, the Office Action admits that Dosaka does not disclose the "switching" feature but asserts that Tamura discloses this feature (see col. 6, lines 6-26 and col. 9,

lines 6-17 of Tamura). However, Tamura only discloses switching electric field under a low-temperature condition such as an idling mode where catalyst action is suppressed (see col. 5, lines 35-45 of Tamura). In comparison, the present application improves NO<sub>x</sub> treatment efficiency by switching frequency and/or voltage for different values at predetermined time intervals, as recited in claim 7. Thus, switching electric field under a low-temperature condition disclosed in Tamura does not correspond to switching frequency and/or voltage for different values at predetermined time intervals. Therefore, Tamura does not cure the deficiency of Dosaka.

Further, there is no motivation to combine Tamura with Dosaka. Specifically, Tamura is directed to conserving electrical power in purifying exhaust gas by not bringing the gas into a plasma state (see col. 1, line 66 - col. 2, line 25 of Tamura). In fact, Tamura teaches away from plasma, and thus is not combinable with Dosaka's plasma reactor. Thus, one of ordinary skill would not have had any reason to combine Tamura with Dosaka.

Additionally, even if combined, Dosaka and Tamura do not disclose the "predetermined time intervals" feature recited in claim 7. As discussed above for claim 1, Dosaka does not disclose this feature. Tamura only discloses switching that is performed sequentially. The switching appears to be based on the exhaust gas temperature or catalyst temperature (see col. 6, lines 9-13 and col. 9, lines 6-48 of Tamura). Thus, Tamura does not disclose switching at "predetermined time intervals," and does not cure the deficiency of Dosaka.

Accordingly, claim 7 is allowable. Claims 8-13 depend from claim 7, and are therefore also allowable by virtue of their dependence, as well as for the features that they recite. Accordingly, Applicants respectfully request withdrawal of rejection of claims 7 and 8-12 under 35 U.S.C. §103(a) over Dosaka in view of Tamura and claim 13 under 35 U.S.C. §103(a) over Dosaka and Tamura in view of Hemingway.

**IV. New Claims**

New claims 15 and 16 depend from claim 1 and 7 respectively, and are therefore also allowable by virtue of their dependence, as well as for the features that they recite. A new independent claim 14 is an apparatus claim corresponding to claim 1. Thus, claim 14 is allowable on the same ground that claim 1 is allowable. A new claim 17 depends from claim 14, and is therefore also allowable by virtue of its dependence, as well as for the feature that it recites.

Accordingly, Applicants respectfully request allowance of claims 14-17.

**V. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-17 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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